

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) In an integrated circuit, a power management architecture comprising:

an integrated circuit power rail to supply power to a plurality of sections of said integrated circuit;

a plurality of voltage meters for measuring a plurality of voltage levels supplied respectively to each of said plurality of sections; and

an first integrated voltage regulator to supply power to said integrated circuit power rail; and

a power management state machine to receive said measured plurality of voltage levels from each of said plurality of sections of said integrated circuit and to control an output voltage of said integrated voltage regulator wherein an output voltage of said first integrated voltage regulator is controlled based on said measured plurality of voltage levels.

2. (original) In an integrated circuit, a power management architecture according to claim 1, further comprising:

a plurality of integrated voltage regulators including said first integrated voltage regulator, each of said plurality of integrated voltage regulators being associated with a different one of said plurality of sections;

wherein an output voltage of each of said integrated voltage regulators is controlled based on a voltage level measured at a respective one of said plurality of sections.

3. (previously presented) In an integrated circuit, a power management architecture according to claim 1, further comprising:

a plurality of integrated voltage regulators including said first integrated voltage regulator, each of said plurality of integrated voltage regulators being operable to supply electrical power to said integrated circuit power rail;

wherein an output voltage of each of said integrated voltage regulators is controlled based on voltage levels measured at at least one of said plurality of sections.

4. (previously presented) In an integrated circuit, a power management architecture according to claim 3, wherein:

said at least one of said plurality of sections at which said voltage level is measured is a section farthest electrically on said integrated circuit power rail from any of said plurality of integrated voltage regulators.

5. (currently amended) In an integrated circuit, a power management architecture comprising:

a plurality of integrated circuit power rails to supply power to a respective plurality of sections of said integrated circuit;

a plurality of voltage meters for measuring a plurality of voltage levels supplied respectively to each of said plurality of sections; and

an plurality of integrated voltage regulator[[s,]] each to supply power to a respective one of said plurality of integrated circuit power rails, and

a power management state machine to receive said measured plurality of voltage levels from each of said plurality of sections of said integrated circuit and to control an output voltage of said integrated voltage regulator [[;]]

~~wherein an output voltage of each of said plurality of integrated voltage regulators is controlled based on said measured plurality of voltage levels.~~

6. (previously presented) In an integrated circuit, a power management architecture according to claim 5, further comprising:

a processor to receive an output from said plurality of voltage meters and to control said plurality of integrated voltage regulators.

7. (currently amended) A method of providing secondary internal voltage regulation in an integrated circuit including internal voltage regulation, said method comprising:

providing at least one integrated circuit power rail to supply power to a plurality of sections of said integrated circuit;

measuring a plurality of levels of voltage supplied to respective ones of said plurality of sections; and

regulating a voltage level of power supplied to said at least one integrated circuit power rail, based on a plurality of voltage levels measured at respective ones of said plurality of sections of said integrated circuit; and

receiving said measured plurality of voltage levels from each of said plurality of sections of said integrated circuit at a power management state machine to control said regulation of an output voltage.

8. (previously presented) The method of providing a secondary internal voltage regulation in an integrated circuit including internal voltage regulation according to claim 7, wherein:

at least three separate integrated circuit power rails are provided to supply power to said plurality of sections of said integrated circuit.

9. (previously presented) The method of providing a secondary internal voltage regulation in an integrated circuit including internal voltage regulation according to claim 8, further comprising:

measuring a plurality of levels of voltage supplied to respective ones of said at least three separate integrated circuit power rails.

10. (currently amended) A method of providing secondary internal voltage regulation in an integrated circuit including internal voltage regulation, said method comprising:

providing a plurality of integrated circuit power rails to supply power to a respective plurality of sections of said integrated circuit;

measuring a plurality of levels of voltage supplied to respective ones of said plurality of sections; and

regulating a voltage output from a plurality of integrated voltage regulators, each of said plurality of integrated voltage regulators adapted to supply power to a respective one of said plurality of integrated circuit power rails; and

receiving said measured plurality of voltage levels from each of said plurality of sections of said integrated circuit at a power management state machine to control said regulation of an output voltage.

11. (previously presented) The method of providing secondary internal voltage regulation in an integrated circuit including internal voltage regulation according to claim 10, wherein:

at least three integrated circuit power rails are provided to supply power to said respective plurality of sections of said integrated circuit.

12. (currently amended) Apparatus for providing secondary internal voltage regulation in an integrated circuit including internal voltage regulation, said apparatus comprising:

means for providing a plurality of integrated circuit power rails to supply power to a respective plurality of sections of said integrated circuit;

means for measuring a plurality of levels of voltage supplied to respective ones of said plurality of sections; and

means for regulating a voltage output from a plurality of integrated voltage regulators, each of said plurality of integrated voltage regulators adapted to supply power and an output voltage to a respective one of said plurality of integrated circuit power rails; and

means for receiving said measured plurality of voltage levels from each of said plurality of sections of said integrated circuit at a power management state machine to control said regulation of an output voltage.